

Remarks

Applicants and the undersigned would like to thank the Examiner for her efforts in the examination of this application. Reconsideration is respectfully requested.

I. Information Disclosure Statement

The examiner has noted, pursuant to MPEP §609.04(a), that references intended for consideration by the Examiner need to be submitted in a separate paper.

An Information Disclosure Statement is enclosed herewith, listing the references that were originally included in the Specification.

II. Specification

The Abstract of the Disclosure has been objected to as including the phrase “Fig. 2”.

An amended abstract is enclosed herewith, having the “Fig. 2” marking removed, and also having been amended to remove extraneous verbiage and reference numerals.

The disclosure has been objected to for informalities. The objection regarding lines 2-3, p 1, have been addressed with the amended par. [0001] provided above. The objection regarding lines 30-32 have been addressed by deleting par. [0008], as indicated above.

III. Claim Objections

The Examiner has objected to Claims 13 and 17 for informalities.

Claim 13 has been canceled from the case.

Claim 17 has been amended to eliminate insufficient antecedent basis for the word “evacuation” with the wording: “wherein the first electrode is adapted for evacuation . . .”.

Therefore, the Examiner’s objections are believed to have been met.

IV. Rejection of Claims 3, 4, and 14 under 35 USC 112

The Examiner has objected to Claims 3, 4, and 14 for indefiniteness.

These claims have been canceled from the case.

V. Claim Amendments

The Examiner is respectfully requested to note the character of the claim amendments, in which the claim language has been amended to conform with U.S. practice, and to improve clarity.

Specifically, in Claim 1, the electrodes are now referred to as a “first” and a “second” electrode, which eliminates extraneous language in subsequent dependent claims, such as “that faces away from the discharge side of the radiation”. Similarly, the “part-areas” are now recited as “first” and “second” part areas for improved clarity. Further, the “characterized in that” language has been amended to “wherein” as appropriate, and reference numerals have been removed.

In Claim 6, the language “at least in an area (10) close to its” has been amended to “adjacent”.

In Claim 7, the “isolators” are now positively recited as claim elements.

Instances of indefiniteness in Claim 2 (“a part-area” twice) and Claim 19 (“a gas pressure” and “a Paschen curve”) have been corrected.

No new matter has been added thereby.

VI. Rejection of Claims 1, 2, 5, 6, 10, 11, and 15-19 under 35 USC 102(b)

The Examiner has rejected Claims 1, 2, 5, 6, 10, 11, and 15-19 under 35 USC 102(b) as being anticipated by Hara et al. (US 4,749,912).

Independent Claim 1 has been amended to more particularly point out that which Applicants regard as their invention. In particular, Claim 1 has been amended to more particularly point out that which Applicants regard as their invention. Specifically, the second electrode is recited as “comprising a hollow electrode substantially completely surrounding a cavity save for an opening therethrough positioned along the axis of symmetry, the second electrode opening facing the first electrode”.

Hara does not teach such an electrode configuration. Note element 13, which is the cathode, in FIG. 1, wherein the cathode is cylindrical and protrudes into a cavity.

Further, Hara does not teach a diaphragm, but rather element 15 is defined as a “partition” made of an “electrically conductive material” [col. 2, lines 15-16].

Therefore, for at least these reasons, Claim 1 as amended, and Claims 2, 5, 6, 10, 11, and 15-19 dependent therefrom, are not anticipated by Hara.

VII. Rejection of Claims 1, 2, 6, 8-10, 15, and 17-19 under 35 USC 102(b)

The Examiner has rejected Claims 1, 2, 6, 8-10, 15, and 17-19 under 35 USC 102(b) as being anticipated by Araki et al. (US 5,539,274).

As discussed above, Claim 1 has been amended to more particularly point out that which Applicants regard as their invention.

Araki '274 does not teach the recited electrode configuration. Rather, Araki teaches a "ring-like electrode 25" [col. 5, line 24].

Araki '274 also does not teach the diaphragm as recited in the instant Claim 1. Rather, Araki teaches that element 7 is an "intermediate electrode (secondary auxiliary electrode)".

Therefore, for at least these reasons, Claim 1 as amended, and Claims 2, 6, 8-10, 15, and 17-19 dependent therefrom, are not anticipated by Araki '274.

VIII. Rejection of Claims 1, 2, 7-10, 15, 16, 18, and 19 under 35 USC 102(b)

The Examiner has rejected Claims 1, 2, 6, 8-10, 15, and 17-19 under 35 USC 102(b) as being anticipated by Araki et al. (US 5,397,956).

As discussed above, Claim 1 has been amended to more particularly point out that which Applicants regard as their invention.

Araki '956 does not teach the recited electrode configuration. Rather, Araki teaches a "hollow cathode 2 [that] penetrates the cover 4 so that its distal end is exposed to the inside of the initial discharge region 12." [col. 5, lines 57-60]

Araki '956 also does not teach the diaphragm as recited in the instant Claim 1. Rather, Araki '956 teaches that elements 43,44 are "intermediate electrodes".

Therefore, for at least these reasons, Claim 1 as amended, and Claims 2, 6, 8-10, 15, and 17-19 dependent therefrom, are not anticipated by Araki '956.

IX. Rejection of Claims 1, 2, 5-7, 10, 15, 18, and 19 under 35 USC 102(b)

The Examiner has rejected Claims 1, 2, 5-7, 10, 15, 18, and 19 under 35 USC 102(b) as being anticipated by Fukui et al. (US 4,894,546).

As discussed above, Claim 1 has been amended to more particularly point out that which Applicants regard as their invention.

Fukui does not teach the recited electrode configuration. Rather, Fukui teaches a “hollow cathode ion source [that] comprises a hollow cathode body 30.” [col. 6, lines 27-29] However, the cathode body does not substantially completely surround the cavity, as recited in the instant Claim 1.

Fukui also does not teach the diaphragm as recited in the instant Claim 1. Rather, Fukui teaches that elements 33-35 are “floating electrodes”.

Therefore, for at least these reasons, Claim 1 as amended, and Claims 2, 5-7, 10, 15, 18, and 19 dependent therefrom, are not anticipated by Araki '956.

X. Rejection of Claim 16 under 35 USC 103(a)

The Examiner has rejected Claim 16 under 35 USC 103(a) as being unpatentable over Araki '274 in view of Melnychuk et al. (US 2003/0006383).

As Claim 16 is indirectly dependent from Claim 1, which is believed patentable, Claim 16 is respectfully believed also to patentably define over the cited art.

Conclusions

Applicants respectfully submit that the above amendments place this application in a condition for allowance, and passage to issue is respectfully solicited. The Applicants and the undersigned would like to again thank the Examiner for her efforts in the examination of this application and for reconsideration of the claims as amended in light of the arguments presented. If the further prosecution of the application can be facilitated through telephone interview between the Examiner and the undersigned, the Examiner is requested to telephone the undersigned at the Examiner's convenience.

Respectfully submitted,

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